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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/626,565 | 07/25/2003 | Kei Hiruma | 116695 | 9343 |
| 25944 | 7590 | 09/07/2005 | | |
| OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320 | | | EXAMINER NGUYEN, HOAN C | |
| | | | ART UNIT 2871 | PAPER NUMBER |
| DATE MAILED: 09/07/2005 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/626,565

Applicant(s)

HIRUMA ET AL.

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/2/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Species A (claims 1-5 and 8-11) filed on 21 June 2005 is acknowledged.

Applicant's arguments regarding the restriction requirement have been considered; however, the traversal was on the grounds that there is no serious burden on the Examiner in examining all of claims 1-12 together. This is not found persuasive since in claims 6-7 and 9-10, a liquid crystal material to make an orientation film or protection may be inorganic material, which is not liquid crystal.

Therefore, the requirement is deemed proper and is considered to be final.

Claims 7-8 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions and species, there being no allowable generic or linking claim. Therefore, ONLY claims 1-5 and 8-11 are pending in the elected Species.

Response to Amendment

Applicant's arguments with respect to claim 1-11 based on the Response filed on 11 March 2005 have been considered but are moot in view of the same ground(s) of rejection. Therefore, this is Final action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Abe (US5511591A).

In regard to claim 8, Abe teaches (Fig. 10) a droplet discharge apparatus 10 which discharges a liquid material from a discharge device and arranges the liquid material in a specified quantity on a substrate (col. 2 lines 35-38), wherein the discharge device has a nozzle for discharging the liquid material in droplets, and the droplet discharge apparatus comprising:

- a liquid material supply system which supplies the liquid material to the nozzle;
- a measuring device which measures a quantity of the liquid material arranged on the substrate (col. 2 lines 35-38);

Claim 9:

- a temperature control device which warms the liquid material to room temperature or higher (col. 5 line 62 to col. 6 line 2).

Claims 10-11:

- this droplet discharge apparatus 10 can manufacture the liquid crystal display (electronic apparatus) comprising a liquid crystal layer

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe (US5511591A) in view of Mondin et al. (EP 994180 A1)

In regard to claims 1 and 3, Abe teaches (Figs. 7-10) a droplet discharge method for discharging a liquid material from a discharge device and arranging the liquid material in a specified quantity on a substrate (col. 2 lines 35-38), the discharge device comprising a nozzle 10 for discharging the liquid material in droplets, and the droplet discharge method comprising the steps of:

- cleaning the nozzle by substitution of capillary 63 (col. 6 lines 29-30);
- arranging at least a part of the liquid material (the first drops of the liquid material used for cleaning on the substrate).

wherein

Claim 2:

- the liquid material is warmed to room temperature or higher (col. 5 line 62 to col. 6 line 2).

Claim 4:

- a sealing material for adhering the first substrate to a second substrate is arranged on the first substrate, and a specified quantity of liquid crystal is arranged on the first substrate, away from the sealing material (Figs. 8-10).

Claim 5:

- after the first substrate and the second substrate are adhered to each other via said sealing material, the liquid crystal is spread over a whole space between the first substrate and the second substrate (Figs. 8-10, col. 8 lines 43-46).

However, Abe fails to disclose the cleaning nozzle and substrate with liquid crystal.

Mondin et al. teach the liquid crystal material being used to clean for the removing oily and greasy soil (liquid crystal composition has an evidenced grease release effect, contains an anionic detergent, an ethoxylated glycerol type compound, a hydrocarbon ingredient, and water).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a droplet discharge method for discharging a liquid material from a discharge device as Abe disclosed with the liquid crystal material being used to clean for the removing oily and greasy soil as taught by Mondin et al. (abstract).

Response to Arguments

Applicant's arguments filed on 11 March 2005 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are follows:

- A. There is no teaching, disclosure or suggestion in Abe for cleaning the nozzle using the liquid material and arranging at least a part of the liquid material used for cleaning on the substrate.
- B. Abe does not disclose a measuring device which measures a quantity of the liquid material arranged on the substrate. Abe merely discloses the drop amount but does not disclose measuring a liquid material that is arranged on the substrate.

Examiner's responses to Applicants' ONLY arguments are follows:

- A. Abe discloses the liquid material (liquid crystal) filling the nozzle and arranging on the substrate as Figs. 8-10 shown. The first liquid materials inherently passing through and arranging on the substrate may be used for cleaning purpose. Furthermore, Mondin teaches that the liquid crystal material can be used for cleaning purpose.

In application, invention of the droplet discharge method comprising cleaning the nozzle and substrate using the liquid material that fills in nozzle and arranges on substrate. Applicant does not disclose the removal of dirty liquid crystal after cleaning, thus, all liquid crystal materials including dirty ones stay in nozzle or on substrate. This invention is not novel because the first liquid materials filling nozzle and arranging on substrate can be used for cleaning purpose, then keeping refilling nozzle and

substrate until the filling process is done. This is conventional process including cleaning step with first liquid materials in nozzle and on substrate is inherent.

B. Abe discloses the drop amount and measuring a liquid material that is arranged on the substrate by varying distance of the origin sensor 55 and the overrun sensor 56 or performing controlling the number of drops (that is measuring amount of liquid material) by stepping motor 31. Therefore, sensor 55/56 or the stepping motor 31 may consider as the measuring device.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571)

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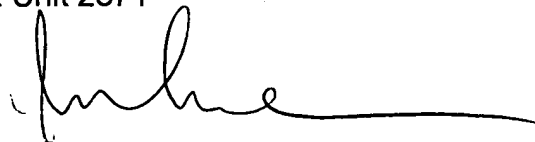
272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim H. Robert can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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HOAN C. NGUYEN
Examiner
Art Unit 2871

A handwritten signature in black ink, appearing to read 'H. Nguyen', with a long horizontal flourish extending to the right.

HOAN C. NGUYEN
EXAMINER